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7590 11/10/2003  
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EXAMINER

VARTANIAN, HARRY

ART UNIT PAPER NUMBER

2634

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/584,746

Applicant(s)

DAVIDSON ET AL.

Examiner

Harry Vartanian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 8-10 is/are rejected.
- 7) ☒ Claim(s) 4-7 and 12-16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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**Detailed Action**

**Drawings**

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 80, 82, 102, 202, 210, 250, 256. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show proper numbering as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). On Page 26, Line 22 the referencing phrase "132 through 140" can be construed as inclusively referencing 132, 133, 134, 135, 136, 137, 138, 139 and 140. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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### ***Specification***

3. The original specification submitted does not have the correct top margins. As a result many words were punched out. It is requested that a substitute specification be submitted with at least  $\frac{3}{4}$  inch spacing before the first line in the page. Please refer to MPEP appendix R § 1.52 for complete patent form rules and regulations on margins.

### ***Claim Objections***

4. Claims 8, and 12-16 are objected as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. There is insufficient antecedent basis for the limitations in the following claims:

The first line of Claim 8 recites the limitation "...according to claim 1, wherein said decoder..." There is insufficient antecedent basis for the limitation *said decoder*.

The first line of Claim 12 recites the limitation "...according to claim 11, wherein said step of detecting the presence of signal activity..." There is insufficient antecedent basis for the limitation *said step of detecting*.

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The first line of Claim 13 recites the limitation "...according to claim 11, wherein said step of acquiring said signal..." There is insufficient antecedent basis for the limitation *said step of acquiring*.

The first line of Claim 14 recites the limitation "...according to claim 11, wherein said step of acquiring said signal comprises the step of performing coarse phase acquisition..." There is insufficient antecedent basis for the limitation *said step of acquiring*.

The first line of Claim 15 recites the limitation "...according to claim 11, wherein said step of pre-tracking..." There is insufficient antecedent basis for the limitation *said step of pre-tracking*.

The first line of Claim 16 recites the limitation "...according to claim 11, wherein said step of pre-tracking..." There is insufficient antecedent basis for the limitation *said step of pre-tracking*.

5. Claims 4-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Fasulo, II, Albert J. et al.(US Patent No. 5,742,639). Fasulo et al discloses a modem apparatus used for satellite communications that has an antenna(Column 4, Line 18), down converter(Column 3, Line 25), up converter(Column 3, Line 29), a transceiver(Column 4, Line 19), a receiver with an IF converter(Column 3, Lines 28-34), a baseband receiver component(Column 3, Line 38 and Column 7, Lines 9-10), and a transmitter component(Column 3, Lines 22-23). Regarding Claim 8, which inherits the limitations of Claim 1, Fasulo et al also describes his satellite modem device having a Viterbi decoder(Column 6, Line 18) "The DSP 39 contains the Codec, Viterbi..." Therefore, this reference may reasonably be read to teach or describe every element or claim limitation of Claims 1 and 8.

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Fasulo, II, Albert J. et al.(US Patent 5,742,639) in view of Lomp et al (US Patent No. 5,799,010). Fasulo's et al receiver is described to have two matched filters for the demodulated I and Q signals, "Outputs of the Hilbert Transform function are written to the in-phase (I) and quadrature (Q) phase input buffers of the detector 82...82 in conjunction with a matched filter recovers the shape of the QPSK symbols."(Column 7, Line 17-21) Furthermore, Fasulo et al discloses a processor having a decoder(Figure 2b, Item 114), a deinterleaver(Figure 2b, Item 89), FEC(Figure 2b, Item 77), and "...a multi-task control processor for controlling the operation of the signal processor."(Abstract)

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Fasulo et al does not disclose the processor's pre-tracking and tracking operation once a signal is detected.

However, Lomp et al discloses a receiver method where a "Pre-Track period immediately follows the acquisition or re-acquisition algorithms and immediately precedes the tracking algorithm." (Column 48, Lines 4-6) Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that Lomp's et al method of pre-tracking followed by tracking a signal after acquisition would be used in a receiver baseband apparatus. The motivation for combining Lomp's et al signal tracking method with Fasulo et al is that it ensures the validity of the received signal by pre-tracking prior to tracking. (Column 48, Lines 4-18)

8. Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Fasulo, II, Albert J. et al.(US Patent 5,742,639) and Lomp et al(US Patent No. 5,799,010) as applied to claim 2 above, and further in view of Philips et al (US Patent No. 5,872,810).

Fasulo et al and Lomp et al disclose all the limitations(please refer to paragraph above) except the operation of Automatic Gain Control(AGC), and signal decimation during signal detection and acquisition.

However, Philips et al discloses a receiver with "A demodulation procedure selection memory for the receiver controls the receiver demodulation protocol. A decimation factor storage memory is provided for the decimating filter, and a clock frequency memory is



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provided for the clock generators." (Column 6, Lines 23-24) In addition to the decimation component, Philips et al receiver discloses with a gain control component(Figure 2, item 227) where "The gain command displays the current automatic gain control (AGC) value. The AGC..." Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that Philip's use of AGC and decimation would be used in a receiver. The motivation for combining Fasulo's et al and Lomp et al receiver with Philips et al receiver is that his modem "is specifically programmable to alter the parameters of the modem to improve performance." (Abstract) Moreover, AGC is a common component used in most wireless receivers for equalization and signal recovery by people of ordinary skill in the art. Decimation reduces the number of samples in a digital signal in order to lower the load on a network and processor; therefor it is an obvious component to have in a receiver to people of ordinary skill in the art.

9. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fasulo, II, Albert J. et al.(US Patent 5,742,639) in view of Liebowitz et al (US Patent No. 5,812,545). Fasulo et al discloses a modem used for satellite communications that has an antenna(Column 4, Line 18), down converter(Column 3, Line 25), up converter(Column 3, Line 29), a receiver with an IF converter(Column 3, Lines 28-34), a baseband receiver component(Column 3, Line 38 and Column 7, Lines 9-10), and a transmitter component(Column 3, Line 22-23).

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Fasulo et al does not disclose the specific frequency band conversion of his down and up converters.

However, Lebowitz discloses a satellite modem that "The RFT unit 56 comprises an up converter for converting the burst to a satellite carrier in the C-band or Ku-band. In addition, the RFT unit 56 comprises a down converter for converting signals received from the satellite (e.g., 950-1450 Mhz or 11.45-11.95 Gigahertz (Ghz) signals) into the intermediate carrier signal (e.g., 70 Mhz or L-band)." (Column 8, Lines 59 to Column 9, Line 5) Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that Lebowitz's satellite modem have up(down) converters to go from L to C or Ku band and vice-versa. The motivation for combining Fasulo's et al receiver method with Liebowitz et al is that conversion to a lower frequency results in less complicated analog circuitry, thereby reducing cost of the modem.

#### ***Claims Allowed***

10. Claim 11 is allowed because it states the specific use of AG, A/D control signals to do the detection, unlike claim 1 which does not disclose the specific detection process of the processors once a signal is received.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Vartanian whose telephone number is 703.305.8698. The examiner can normally be reached on 9-5:30 Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703.305.4714. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is NONE.

Harry Vartanian

Examiner

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HV

  
**STEPHEN CHIN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**

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